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EFFECTIVE SOLUTION OF SOME BOUNDARY VALUE PROBLEMS OF I.N.VEKUA'S SHELL THEORY

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Based on I.N.Vekua's shell theory (approximation N=1) for rectangular plates and slanting shells a number of boundary value problems are effectively solved when conditions of free support (antisymmetry conditions) and sliding jam (symmetry conditions) are defined on the boundary of the domain or when on one part of the boundary outline symmetry conditions are defined, while on the other antisymmetry conditions are given. Using the method of separation of variables the mentioned boundary value problems are reduced to the solution of an infinite system of linear algebraic equations with a block diagonal matrix. The desired functions (components of the displacement vector and stress tensor) are represented as double trigonometric series. Uniform convergence of these series is proved as well as the uniqueness of the solution of the studied boundary value problems.